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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,711	04/24/2001	Christian Voyer	FA1000 US NA	4824

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EXAMINER

SEALEY, LANCE W

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/840,711

Applicant(s)

VOYE ET AL.

Examiner

Lance W. Sealey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 and 15 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7 and 9-13 is/are rejected.
- 7) ☒ Claim(s) 5,6 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Allowed and Allowable Subject Matter

1. Claims 14 and 15 are allowed, and claims 5-6 and 8 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. The prior art does not anticipate or suggest, in a process for the generation of a computer image of a coated, three-dimensional object comprising the step of applying at least a relevant coating layer on at least two test panels coated in a horizontal orientation and two test panels coated in a vertical orientation, and storing the relevant optical data with assignment of the relevant orientation prevailing while the test panels are being coated, and the relevant optical data are selected accordingly when assigned to each individual polygonal area (claim 5); and optical data measured as a function of angle are stored with assignment (the word "assignment" is underlined to emphasize why this claim limitation is allowable) of the relevant angles selected from the group consisting of observation angles, illumination angles and combinations thereof; and further wherein the optical data measured as a function of angle are assigned to each individual polygon area as a function of an observer and at least one illumination source (claim 8). Claim 14 is allowed because it incorporates the allowable material of claim 5. Claim 6 is allowable because it depends on claim 5. Claim 15 is allowed because it depends on allowed claim 14.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was

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made.

4. Claims 1-3 and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable by Shinohara (U.S. Pat. No. 5,877,769) in view of Numata et al ("Numata," U.S. Pat. No. 6,539,325).
5. Shinohara, in disclosing an image processing apparatus and method, also discloses, with respect to claim 1(a), the generation of a computer image of a coated, three-dimensional object, claim 1(d), faceting the visible surface(s) of a three-dimensional object by computer into a sufficient number of flat polygonal areas each being sufficiently small for the sufficiently accurate description of the surface topography, claim 1(e), assigning the relevant set of coating parameters and associated optical data in each case to each individual polygonal area by computer, and claim 1(f), assembling the polygonal areas into a computer image of the three-dimensional object. A computer image of a coated three-dimensional object (the claim 1(a) element) is disclosed at col.3, 1.50 to col.4, 1.6 (the objects in FIG.1 are three-dimensional and texture is a coating); the claim 1(d) element is disclosed at col.3, ll.64-66; the claim 1(e) element is disclosed at the second sentence of the Abstract (texture is comprised of optical surface properties (viewpoint data, col.3, 1.67 to col.4, 1.6) and coating parameters (color, col.4, 1.8)); and the claim 1(f) element is disclosed at the second sentence of the Abstract ("filling a polygon to generate image data").
6. However, Shinohara does not disclose, with respect to claim 1(a), a process comprising the steps of applying at least different relevant coating layers under the influence of a set of coating parameters; claim 1(b), taking a plurality of measurements of at least one optical surface property as a function of the set of coating parameters selected on application of the relevant coating layer on each panel; or claim 1(c), storing the optical data in a datafile with assignment of the relevant set of coating parameters. These elements are disclosed by the Numata color matching apparatus for automotive repair paints. The claim 1(a) element of applying at least different relevant coating layers under the influence of a set of coating parameters (colorants, pigments, coating thickness) is disclosed at col.9, ll.15-39. Applying the relevant coating parameters on at least two test panels under the influence of a set of coating parameters which differs with respect to each panel is disclosed at col.9,

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11.25-32. The claim 1(b) element is disclosed at col.9, 11.20-25 (spectral reflectance and flop value). The claim 1(c) element is disclosed at col.16, 11.45-61.

7. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Numata color matching apparatus with the Shinohara image processing apparatus. Such a combination of these two references would allow the successful matching of automotive repair paint with existing paints with high precision in a reduced number of steps even by a novice (Numata, Abstract).

8. With respect to claim 2, Numata discloses a single-layer top coating consisting of the relevant coating layer at col.9, 11.15-20.

9. Concerning claim 3, Snyder discloses the relevant coating layer participating as one layer in a multi-layer coating in col.3, 1.62 to col.4, 1.1.2, especially col.3, 11.65-66 (“pigmented finish paints such as base coats of a base coat/clear coat combination”).

10. With respect to claim 9, Shinohara discloses the computer image as a representation selected from the group consisting of i) representation of an individual optical surface property and ii) representation of a combination of at least two optical surface properties; i) is disclosed at the second sentence of the Abstract (texture).

11. Concerning claim 10, Shinohara discloses a) a visually perceptible three-dimensional representation of a computer image (FIG.1). Regarding claim 12, Shinohara discloses a real-time representation of a computer image at col.3, 1.63 (real-time). Shinohara does not directly disclose the “interactive” component of claim 12, but it would have been obvious to a person skilled in the art at the time the invention was made to disclose in interactive image because manipulation of an image by an operator is mentioned in the Description of the Related Art section: “simulations and games are provided by computer programs in such a manner that each object of an image or the viewpoint on the display is moved in accordance with manipulation by an operator” (col.1, 11.15-19).

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12. Regarding claim 11, Shinohara does not explicitly disclose the computer image existing only as a data set. However, at the second sentence of the Abstract, Shinohara discloses a frame buffer memory 16 (FIG.4). It would have been obvious to a person skilled in the art at the time this invention was made that a frame buffer would constitute a data set during the time it is storing an individual 3D image.

13. Finally concerning claim 13, Snyder discloses the three-dimensional object as being selected from the group consisting of motor vehicle bodies and body parts in col.1, ll.10-11, where the reader learns that the Snyder invention has its background in the automotive industry.

14. Accordingly, in view of the foregoing, claims 1-3 and 9-13 are rendered unpatentable under 35 U.S.C. 103(a) by Shinohara and Numata.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable by Shinohara in view of Numata and further in view of Rupieper et al. ("Rupieper," U.S. Pat. No. 5,991,042).

16. Neither Shinohara nor Numata disclose the two test panels assuming a position selected from the group consisting of a horizontal orientation and a vertical orientation. However, this element is disclosed by Rupieper at col.2, l.60, to col.3, l.5.

17. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Shinohara-Numata apparatus with the teaching of Rupieper. Such a combination of these references would save time by drying the test panels more quickly (Rupieper, col.3, ll.1-5).

18. Accordingly, in view of the foregoing, claim 4 is rendered unpatentable under 35 U.S.C. 103(a) by Shinohara, Numata and Rupieper.

19. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable by Shinohara in view of Numata and further in view of applicants' admitted prior art.

20. Regarding claim 7, the applicants admit that these elements are either disclosed by the BYK-Gardner Wave-scan product ("Wave-scan"), or they are known to those skilled in the art. According to p.5 of the

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specification, Wave-scan performs non-angle-dependent (or “angle-independent” measurements, as the specification characterizes them) measurements (ll.15-16), visual determinations of pitting and sagging limits (ll.16-17), colorimetric measurements on single-color coatings (ll.17-18) and measurements of surface structure (ll.18-19). Furthermore, the applicants admit that taking angle-dependent colorimetric measurements is known to those skilled in the art (ll.35-36).

21. Therefore, it would have been obvious to a person with ordinary skill in the art at the time this invention was made to combine the Shinohara-Numata apparatus with the teaching of the applicants’ admitted prior art. Optical measurements help to evaluate how a coating will appear.

22. Accordingly, in view of the foregoing, claim 7 is rendered unpatentable under 35 U.S.C. 103(a) by Shinohara, Numata and applicants’ admitted prior art.

Response to Remarks

23. The applicants first assert that that there is not enough evidence that the BYK-Gardner reference used in the first Office action can be used as a reference to reject claim elements under 35 U.S.C. 102(a) or 102(b). In response, the examiner has ceased using the BYK-Gardner reference to disclose any applicant elements and is now using other references which can be used to reject claim elements under 35 U.S.C. 102(a), 102(b) or 102(e) to reject the claim elements previously rejected by BYK-Gardner.

24. Next, the applicants assert that even if the BYK-Gardner reference could be used as a reference to reject claim elements under 35 U.S.C. 102(a) or 102(b), the examiner’s rejection constitutes “using the claimed invention as an instruction manual or template to piece together the teachings of the prior art so that the claimed invention is rendered obvious,” *In re Fritsch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). This assertion is incorrect because the BYK-Gardner product, while it has been mentioned in the specification, is not the claimed invention.

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25. The applicants then assert that “there is simply no disclosure in any of the references directing one of ordinary skill in the art to combine the references cited by the Examiner to create Applicants’ claimed process. Indeed, there is not even disclosure that would make it obvious to try to produce Applicants’ claimed process, a standard that also is not a legitimate test of patentability.” *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988). As an example, the applicants present the Numata reference as not disclosing a computer image of a coated three-dimensional object.

26. The applicants seem to be mixing the requirement for presenting a *prima facie* case of obviousness with the requirement for combining references. The requirement for combining references is one element of presenting a *prima facie* case of obviousness; the requirement that the prior art references, when combined, must teach or suggest all of the claim limitations is another element of presenting a *prima facie* case of obviousness (see MPEP 2143).

27. With respect to the examiner’s meeting the requirement of properly combining references, in every incident in which references have been combined, the examiner has, both in the first and in this Office action, given a motivation to combine each reference that had been located within the reference as required by MPEP 2143.01.

28. With respect to the examiner’s meeting the requirement of showing that the prior art references, when combined, must teach or suggest all of the claim limitations, the examiner acknowledges that Numata does not disclose the generation of a computer image of a coated three-dimensional object. But Shinohara, which is being combined with Numata, does disclose the generation of a computer image of a coated three-dimensional object. Finally, the combination of Numata with Shinohara has a reasonable expectation of success because both references are concerned with coatings. Therefore all of the elements of presenting a *prima facie* case of obviousness in rejecting the applicants’ claims have been fulfilled.

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29. Next, the applicants, in “express[ing] confusion as to the significance of customer satisfaction in relation to the use of a relevant coating layer,” seem to imply that customer satisfaction is not a permissible motivation to combine two references, and that customer satisfaction was used to define what is a relevant coating layer: “the Examiner must use the meaning of claim terms as the Applicant has defined them in the specification as long as the claim term is not given a meaning repugnant to its usual meaning.” Customer satisfaction was not used to define what is a relevant coating layer; it was cited as a motivation to combine the Numata-Snyder references with the BYK-Gardner reference. The requirement in MPEP 2143.01 to properly combine references only states that a motivation come from one of (underline added by examiner for emphasis) three possible sources: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art. This requirement does not eliminate specific motivations, like customer satisfaction, nor does it eliminate a motivation if it is not found in all three sources. Since the examiner had shown the customer satisfaction motivation to be found within the BYK-Gardner reference, it was a legitimate motivation for combining BYK-Gardner with Numata and Snyder. Of course, this argument of the applicants is moot because neither the BYK-Gardner nor the Snyder references are being used in this Office action to reject the applicants’ current claims.

30. Finally, with respect to claim 1, the applicants assert that Sasaki, which was used to reject steps (e) and (f) of applicants’ claim 1, was inapplicable to combine with the rest of the references used to reject claim 1 because Sasaki was directed primarily (word underlined by examiner for emphasis) toward generating three-dimensional objects in video games and (i) one of ordinary skill in the art would not combine a disclosure that teaches generation of video game images, but does not provide any disclosure of assigning coating parameters of polygons, with the rest of the references; and (ii) Sasaki is not an art analogous to paint coatings.

31. In this latest Office action, Shinohara has been substituted for Sasaki, not because the examiner is persuaded by the applicants that Sasaki is inapplicable to be combined with the other references, but because

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Shinohara is a better reference. Shinohara, like Sasaki, is applicable in image simulation (Shinohara, col.1, ll.15-19). Since the applicants are also generating a 3-D image, it is (i) reasonable that one of ordinary skill in the art would combine two disclosures in which 3-D images are generated. Furthermore, MPEP 2141.01(a) states that a reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's, it is one in which, because of the matter in which it deals, logically would have commended itself to an inventor's attention in considering his problem. Therefore, even though the Shinohara invention is in a different field from that of the applicants' (image processing vs. paint coatings), both Shinohara and the applicants' invention had to deal with generating a 3-D image. Therefore, Shinohara is analogous art under MPEP 2141.01.

32. The only other assertion the applicants make against the examiner's rejection of claims other than claim 1 is an assertion of the inapplicability of Rupieper to the rejection of claim 4. Taking into account claim 4's dependence on claim 1, claim 4 only discloses the two test panels in step (a) of claim 1 assuming a position selected from the group consisting of a horizontal orientation and a vertical orientation. The examiner has demonstrated both that Rupieper discloses all the claim limitations of claim 4 and that it is combinable with the references used to reject claim 1. These facts, along with the idea that combining Rupieper with the other references would have a reasonable expectation of success because it is an automated process just like all of the other references (see Rupeiper, col.9, l.53 to col.10, l.2) and that like Numata it is concerned with paint coatings (see Rupeiper Abstract), support the fact that a *prima facie* case has been made for the obviousness rejection of claim 4.

Conclusion

Any inquiry concerning this communication or earlier communications from the Office should be directed to the examiner, Lance Sealey, whose telephone number is (703) 305-0026. He can be reached from 7:00 am-3:30 pm Monday-Friday EDT.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached at (703) 305-9798.

Any response to this action should be mailed to:

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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).


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